

549, 732

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
30 September 2004 (30.09.2004)

PCT

(10) International Publication Number
WO 2004/084087 A1

(51) International Patent Classification⁷: G06F 17/00,
A61B 5/0488

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(21) International Application Number:

PCT/GB2004/001120

(22) International Filing Date: 16 March 2004 (16.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0306629.7 22 March 2003 (22.03.2003) GB

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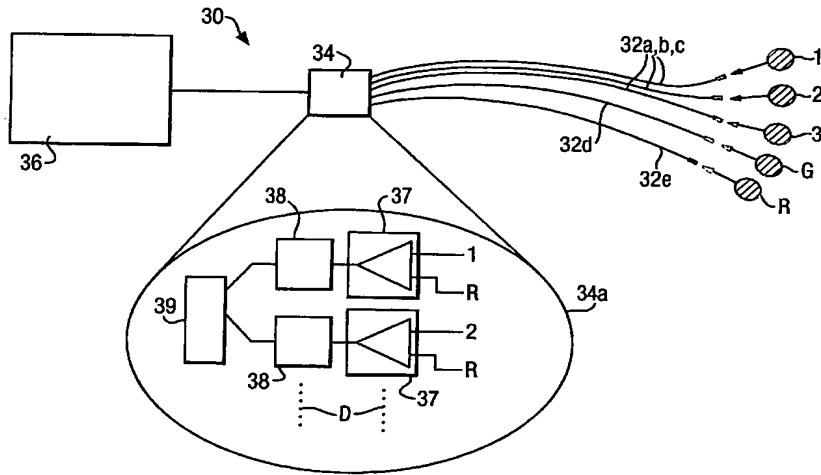
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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(54) Title: MONITORING ELECTRICAL MUSCULAR ACTIVITY



(57) Abstract: A method of monitoring muscular electrical activity non-invasively (such as uterine activity) which includes applying a localised group of electrodes (7, 8, 10 to 12) to a patient's skin and monitoring signals thereon. The electrodes (7, 8, 10 to 12) are localised sufficiently such that their muscular signal contributions simulate a single source despite source non-stationarity. The signals are amplified, filtered and digitised. They are then digitally filtered and processed by independent component analysis (ICA) to separate a muscular activity source from other sources. The method may be used to monitor maternal uterine activity, fetal activity and maternal and fetal cardiac activity simultaneously with the aid of additional electrodes (1 to 6, 9) and associated circuitry (32 to 39).

WO 2004/084087 A1



Declaration under Rule 4.17:

- *of inventorship (Rule 4.17(iv)) for US only*

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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